

REMARKS

This Amendment is in response to the Office Action mailed April 19, 2006. Claims 1-10 are pending. Claims 3 and 8 are amended to correct antecedent basis problems and to clarify the claim language.

In paragraphs 3 and 4 of the Office Action, claims 1 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art (AAPA) in view of U.S. Patent No. 5,912,876 to H'mimy, in further view of U.S. Patent No. 5,235,612 to Stilwell et al. (Stilwell). Applicant respectfully traverses these rejections.

Among the limitations of independent claims 1 and 5 which are neither disclosed nor suggested in the art of record is the requirement that the apparatus comprises an equalization filter that equalizes "spread spectrum signals based on the frequency response of the plurality of radio channels" to eliminate radio channel distortion.

None of the three cited references disclose an equalization filter as claimed. As admitted in the Office Action on page 4, "AAPA in view of H'mimy may not specifically disclose equalizing spread spectrum signals based on the frequency response of the plurality of radio channels to eliminate channel distortion." As argued previously, H'mimy does not teach or suggest such an equalization filter and thus does not solve the problem of reducing interference generated from other frequency distorted, coded signals, because only the decoded signal is equalized, not the spread spectrum signals. Notably, H'mimy is directed to improving the reception of an orthogonal frequency division modulated (OFDM) signal, not code division multiple access (CDMA) signals. H'mimy does not teach or suggest equalizing the radio frequency channel spectrum to recover code

orthogonality (that was lost to fading and channel interference) before despreading the signal, as disclosed in the present invention. Instead, H'mimy teaches equalizing the signal after decoding the signal.

Stilwell fails to cure this deficiency. Stilwell is directed to a system that separates CDMA signals to help cancel interference from other signals, but does not disclose an equalizer that helps to eliminate interference, even if the interfering signals are distorted by fading. Stilwell teaches, in the portions cited in the Office Action, that undistorted interfering coded signals can be decoded and notched out sequentially from the composite spread spectrum signal, leaving the desired signal and the noise behind. This is technically different from an equalizer, because the interfering signal is despread from the CDMA radio channel and removed by a narrow band filter. The remaining signals are re-spread into the radio channel spectrum. This process is repeated for all of the potentially interfering signals, until the desired signal and noise remains. This technique is not equalization of the radio channel spectrum and it does not eliminate the effects of fading, which would still create interference on the radio channel from the distorted interfering signals that would not be eliminated by the narrow band filter. Stilwell does not teach equalizing the composite spread-spectrum signal for the frequency response of the plurality of channels. Thus, Stilwell's technique for removing spreading code interference does not disclose an equalizer and does not eliminate channel distortion imposed on the interfering coded signals. Further, even if there were a motivation to combine Stilwell with H'mimy and AAPA, the combination would not result in the present invention. Accordingly, Applicant respectfully submits that independent claims 1 and 5 patentably distinguish over the art of record.

Claims 2 and 9 depend from independent claim 1 and include all of the limitations found therein. Each of these dependent claims include additional limitations which, in combination with the limitations of claim 1, are neither disclosed nor suggested in the prior art of record. Accordingly, claims 2 and 9 are likewise patentable.

In paragraph 5 of the Office Action, claims 3 and 6-8 are rejected under U.S.C. § 103(a) as being unpatentable over AAPA in view of H'mimy. Applicant respectfully traverses these rejections.

Among the limitations of independent claims 7 which is neither disclosed nor suggested in the art of record is that the mobile station comprises "a demodulation unit for demodulating the outputs from said equalization filter." Among the limitations of claim 3 which are neither disclosed nor suggested in the art of record is the step of "equalizing then demodulating said modulated signals from said base station." While H'mimy discloses an equalizer, H'mimy equalizes the demodulated signal. In addition to the arguments presented in the previous response dated February 14, 2006, which are incorporated by reference herein and are not repeated, H'mimy's demodulation unit demodulates an unequalized composite spread-spectrum signal. Thus, H'mimy does not disclose "a demodulation unit for demodulating the outputs from said equalization filter," because H'mimy equalized the demodulated signal rather than the composite spread-spectrum, as admitted on page 4 of the Office Action in connection with the rejection of claims 1 and 5. Therefore, in the absence of any disclosure suggestion of this feature of the invention, claims 3 and 7 are believed to be in condition for allowance.

Among the limitations of claims 6 and 8 which are neither disclosed nor suggested in the art of record are that the mobile station(s) comprise(s) a selection unit that

“selects an output with higher communication quality...among the outputs by said first and second receiving units.” Claim 8 contains a similar structural limitation. Among the additional limitations of claim 3 which are neither disclosed nor suggested in the art or record is the step of “selecting an output with higher communication quality from the equalized, demodulated output and the conventional output.”

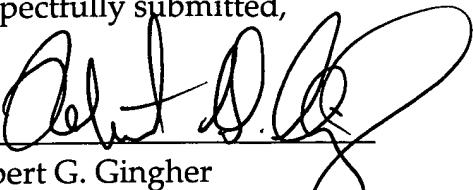
As argued above in connection with claims 3 and 7, H’mimy does not disclose a demodulator for demodulating the output from said filter unit. Further, H’mimy does not disclose a selection unit. H’mimy selects the proper subsequence for the received signal from “a memory 125 containing all possible subsequences of signals transmitted by the system...” H’mimy does not disclose a selection device that chooses between the outputs of a first receiving unit (an equalizing unit equalizing/demodulation unit) and a second receiving unit (a rake receiving unit). In the absence of any disclosure or suggestion of these additional features of the invention, claims 3, 6 and 8 are believed to be in condition for allowance.

Claims 4 and 10 depend from independent claim 3 and include all the limitations found therein. Each of these dependent claims include additional limitations which, in combination with limitations of claim 3, are neither disclosed nor suggested in the prior art of record. Accordingly, claims 4 and 10 are likewise patentable.

In view of the above remarks, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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